

CLAIMS:

1-21. (cancelled)

22. (currently amended) A location management apparatus which maintains a location[[s]] of a mobile station[[s]] within a mobile communication network ~~for wirelessly communicating with the mobile station, comprising:~~

a communication control configured to communicate with the mobile station, using the mobile communication network, and receive from the mobile station an identification of a transportation on which the mobile station is carried;

a location information storage in which the location[[s]] of the mobile station[[s]] are-is identifiable with reference to communication areas where the mobile stations are situated, and the identification of the transportations on which the mobile stations are being carried; and notified by the mobile station;

a transportation location finder that configured to identifies-identify a communication area where a-the transportation is situated, based on movement information obtained from a traffic control that manages an operation of a transportation system including the transportation on which the mobile station is carried; and

wherein-a paging control configured to, when a call for the mobile station comes, access the location information storage is-accessible-to-so as to find a-the communication area, where the transportation is situation, determined by the transportation location finder-where a particular mobile station is situated-or a communication area, using the transportation location finder, where a transportation is situated on which the particular mobile station is being carried and cause a paging signal transmitted within the communication area.

23. (previously presented) A location management apparatus according to claim 22, wherein the communication area is a paging area.

24. (currently amended) A location management apparatus according to claim 22, wherein ~~a location of a mobile station stored in the location information storage is~~ updated by a registration request from the mobile station which identifies either a communication area which the mobile station enters or a transportation on which the mobile station ~~moves~~ is carried.

25. (currently amended) A location management apparatus according to claim 22, wherein the transportation location finder determines the communication area where the transportation is situated, using a geographical location of the transportation contained in the movement information.

26. (currently amended) A location management apparatus according to claim 22, the transportation location finder is activated to find the communication area where the transportation is situated when a ~~communication has to reach~~ call is received for ~~at the~~ mobile station being carried on the transportation.

27. (previously presented) A location management apparatus according to claim 22, wherein the location information storage and the transportation location finder are located on different servers functionally connected to each other.

28. (currently amended) A location management apparatus according to claim 22, wherein the location information storage comprises a first table in which ~~the locations of the mobile stations are identified with reference to~~ the transportations on which some of the mobile stations are being carried and the communication areas where the other of the mobile stations are situated, and the transportations on which mobile stations are being carried, and a second table in which locations of the transportations are identified with reference to communication areas where the transportations are situated.

29. (currently amended) A location management apparatus according to claim 28, wherein the second table is updated by an update request from the transportation location finder receiving the movement information ~~geographical locations of the~~ transportation[[s]].

30. (currently amended) A location management apparatus according to claim 22, further comprising a receiver that receives travel information from ~~a~~the mobile station which transmits the travel information in response to ~~the~~a paging signal initiated by the location management apparatus.

31. (previously presented) A location management apparatus according to claim 30, wherein the travel information comprises a geographical location of the mobile station, a traveling direction thereof and a traveling speed thereof.

32. (previously presented) A location management apparatus according to claim 25, further comprising a transportation travel information storage accessible by the transportation location finder which maintains geographical locations of the transportations.

33. (previously presented) A location management apparatus according to claim 32, wherein the transportation travel information storage stores travel statuses of the transportations, wherein the travel status comprises a delay in schedule.

34. (previously presented) A location management apparatus according to claim 33, wherein the travel statuses of the transportations are receivable by the location management apparatus.

35. (previously presented) A location management apparatus according to claim 32, further comprising a schedule information storage that stores travel schedules of the transportations, wherein based on information stored in the transportation travel information storage and the schedule information storage, the location management apparatus determines a future location of a transportation.

36. (previously presented) A location management apparatus according to claim 35, wherein the travel schedules of the transportations are receivable by the location management apparatus.

37. (previously presented) A location management apparatus according to claim 22, wherein a location of a mobile station stored in the location information storage is updated by a registration request from a transportation which identifies the transportation and the mobile station.

38. (cancelled)

39. (currently amended) A mobile station according to claim ~~38~~42, further comprising a positioning device that determines a travel status of the mobile station which comprises a geographical location of the mobile station.

40. (previously presented) A mobile station according to claim 39, wherein the travel status further comprises a traveling speed of the mobile station and a traveling direction thereof.

41. (previously presented) A mobile station according to claim 39, further comprising a transmitter that transmits the travel status in response to a paging signal.

42. (new) A mobile station registrable with a wireless communication network that comprises at least one communication area, comprising:

a location signal receiver configured to receive from the wireless communication network a location signal indicative of an identification of an communication area in which the mobile station is situated, and receive an identification signal from a transportation which comprises an identification of the transportation;

a first registration control responsive, absence the identification signal, to the location signal to transmit to the wireless communication network a first registration request which comprises the identification of the communication area, whereby the mobile station becomes locatable with respect to the communication area; and

a second registration control responsive to the identification signal to disable the first registration control and transmit a second registration request which comprises the identification of the transportation, whereby the mobile station becomes locatable with respect to the transpiration.

43. (new) A location information provider comprising:

- a query receiver configured to receive an inquiry from a user asking a location of a mobile station;

- a paging control responsive to the inquiry to cause the mobile station to be paged and receive location information of the mobile station from the mobile station;
- and

- a transmitter configured to transmit to the user a response which comprises at least a part of the location information.

44. (new) A location information provider according to claim 43, wherein the location information comprises a geographical location of the mobile station.

45. (new) A location information provider according to claim 43, wherein the location information comprises a direction in which the mobile station is moving and a speed at which the mobile station is moving.

46. (new) A location information provider according to claim 43, wherein the response comprises an indication as to whether or not the mobile station is situated on a transportation

47. (new) A location information provider comprising:

- a query receiver configured to receive an inquiry from a user asking a location of a mobile station;

- a memory that stores time schedules of transportations;

- a location queryer responsive to the inquiry to find if the mobile station is situated on a transportation;

- a location estimator configured to determine, if the mobile station is situated on a transportation, a future location of the mobile station by referring to the time schedules stored in the memory; and

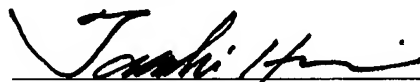
- a transmitter configured to transmit to the user a response which comprises the determined future location of the mobile station.

48. (new) A location information provider according to claim 47, wherein the location querier also finds, if the mobile station is situated on a transportation, a current location of the transportation and an identification of the transportation, and the response comprises the current location of the transportation and the identification of the transportation.

Respectfully submitted,

May 4, 2006

Date



Tadashi Horie (Reg. No. 40,437)

BRINKS HOFER GILSON & LIONE
P.O. Box 10395
Chicago, IL 60610
(312) 321-4200